

A NEW SPECIES OF THE GENUS *TRITHYREUS* (*SCHIZOMIDA*, SCHIZOMIDAE) FROM THE DAITÔ- ISLANDS, OKINAWA PREFECTURE, JAPAN

By

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Synopsis

SHIMOJANA, Matsuei (Urasoe Senior High School, 130 Uchima, Urasoe-shi, Okinawa): A new species of the genus *Trithyreus* (Uropygi, Schizomidae) from Daitô-Islands, Okinawa Prefecture, Japan. *Acta arachnol.*, 30: 33-40 (1981).

Two species belonging to genus *Trithyreus* have been recorded from Japan until now. The present paper deals with the description of *Trithyreus daitoensis* sp. n. In general appearance, it resembles *Trithyreus sawadai* KISHIDA known from the Bōnin Islands (or the Ogasawara Islands), but can be distinguished from *T. sawadai* and all the other "*Trithyreus*" hitherto known by the shape and setational pattern of flagellum of both the sexes.

While carrying on arachnological surveys in the Ryukyu Islands, I have hitherto investigated about two hundred and fifty limestone caves. In one of the caves lying in the Daito-Islands visited in the summer of 1977, the author obtained some schizomid whip-scorpions of the genus *Trithyreus*. These individuals belong to a species which to be new to science.

The holotype (male) and one of the paratypes (female) of the new species are deposited in the collection of the Department of Zoology of the National Science Museum, Tokyo.

Before going, the author wishes to express his hearty thanks to Dr. Shun-ichi UENO and Dr. Tsukane YAMASAKI of the National Science Museum Nat. Hist., Tokyo for their cordial guidance and kind help in the course of this study. The author also wishes to express his appreciation to Dr. Takeo YAGINUMA of Ohtemon Gakuin University for his continuous encouragement and valuable suggestions.

Trithyreus daitoensis sp. n.

The Japanese name : Daitô-sawada-mushi

Holotype (adult male): Hoshino-no-ana Cave, Minami-daitô-jima Island, Okinawa Prefecture, 31-VII-1977. M. Shimojana leg.

Body length (from apex of propeltidium to the tip of flagellum), 5.65 mm. Propeltidial length, 1.73 mm.

Colour, in general, light reddish brown. Anterior part of cephalothorax, chelicera, pedipalp and flagellum somewhat dark reddish. Metapeltidium and legs light yellowish brown.

Cephalothorax: Propeltidium saddle-shaped as shown in Fig. 1, length twice as long as wide, strongly protruded in the anterior margin, the projecting portion with three setae as given in Fig. 1; whitish eye spots present in indefinite pale areas on the antero-lateral surface of carapace. Postero-medial margins of carapace (propeltidium) slightly concave. Dorsal surface of carapace bearing nine setae as shown in Fig. 1. Mesopeltidium shaped acutely triangular, without spine. Metapeltidium divided into two plates, each plate wider than long (0.48/0.40 mm); plates without spine, its anterior margin slightly concave and postero-lateral margins roundly convex. Cephalic sternum subtriangular; antero-lateral margins round and longer than wide; posterior apex of cephalic sternum lies between second coxae; the surface of sternum bearing twelve short setae.

Chelicera: First segment bearing a long stout seta at the apical part of the dorsum, seven long modified setae, a short feathered seta and a short simple seta on ventral area; granules of stridulating organ developed as shown in Fig. 4; inner surface with three short setae dorsally and seven short setae at the dorsal third; the first segment also bearing five and four simple setae at the distal area on the inner and outer surfaces.

Pedipalp: Total length, 4.63 mm. Coxae the longest in all segments; trochanter shorter than femur, acutely protruding distally, tip of distal process without spine; femur strongly curved; patella a little longer than tibia; tibia three times as long as wide; tarsus twice the length of claw and the distal portion of tarsus bears two spurs; claw short without tooth. Surface of pedipalp with many long and short setae as shown in Fig. 6.

Legs: First leg extremely slender, and longer than twice the length of body, coxa longer than trochanter; femur shorter and stouter than tibia; patella

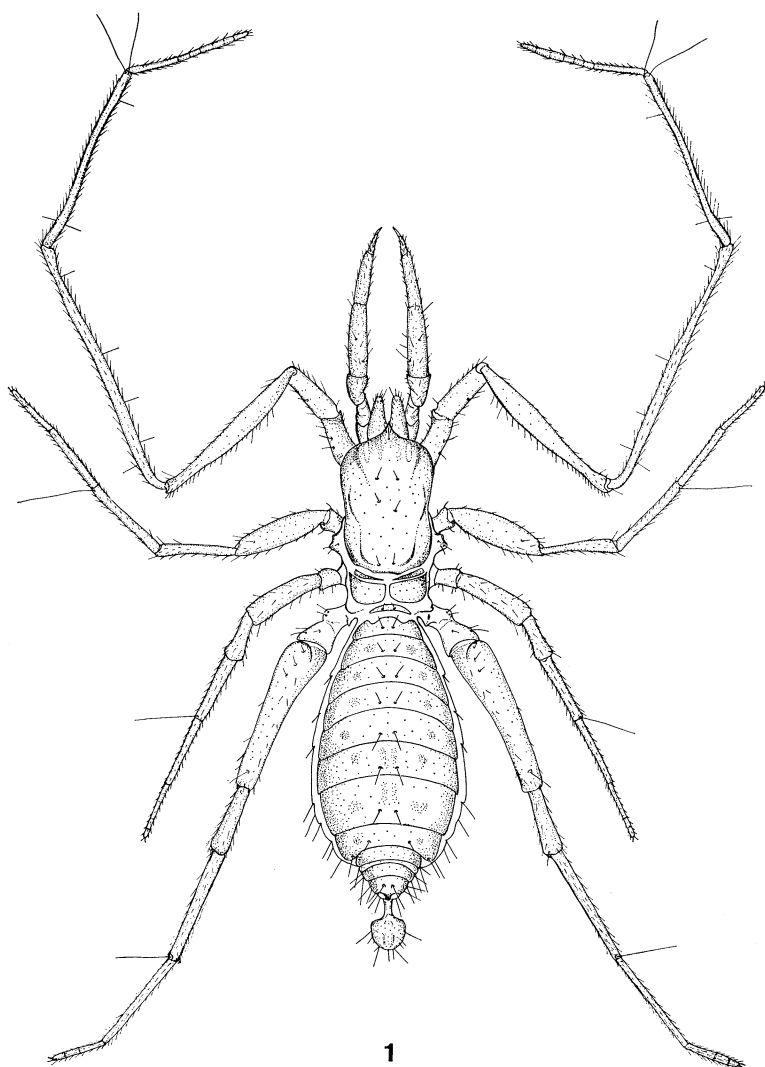
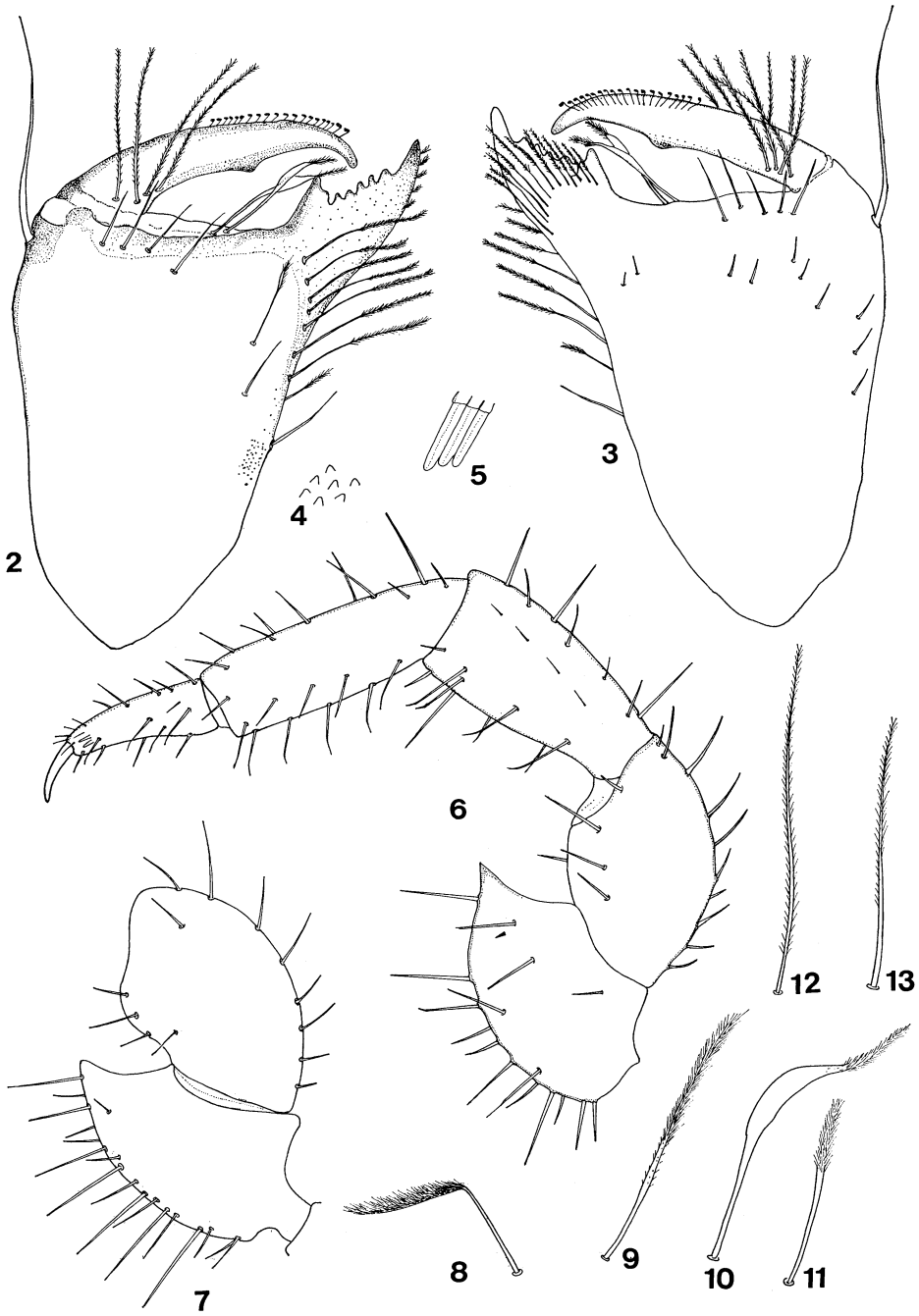


Fig. 1. *Trithyreus daitoensis* sp. n. dorsal aspect of male.

slender and longer than abdomen; tarsus longer than basitarsus which is clawless. Second leg slightly longer than the third leg; coxae with a long antero-distal projection, its end with a short spine. Third leg the shortest among all legs. Fourth leg stouter than the others: femur stout and the longest of



all the segments, with blunt convexity on the proximo-dorsal margin.

Measurements of right legs are as follows (mm).

	Pedipalp	1st leg	2nd leg	3rd leg	4th leg
Coxa	1.08	1.01	0.94	0.61	0.54
Trochanter	0.72	0.68	0.25	0.32	0.58
Femur	0.86	2.77	1.51	1.33	2.16
Patella	0.83	3.74	0.72	0.58	0.90
Tibia	0.76	2.63	1.08	0.79	1.73
Basitarsus	—	0.79	0.86	0.94	1.51
Tarsus	0.38	0.86	0.61	0.58	0.92
Total	4.63	12.48	5.97	5.15	8.34

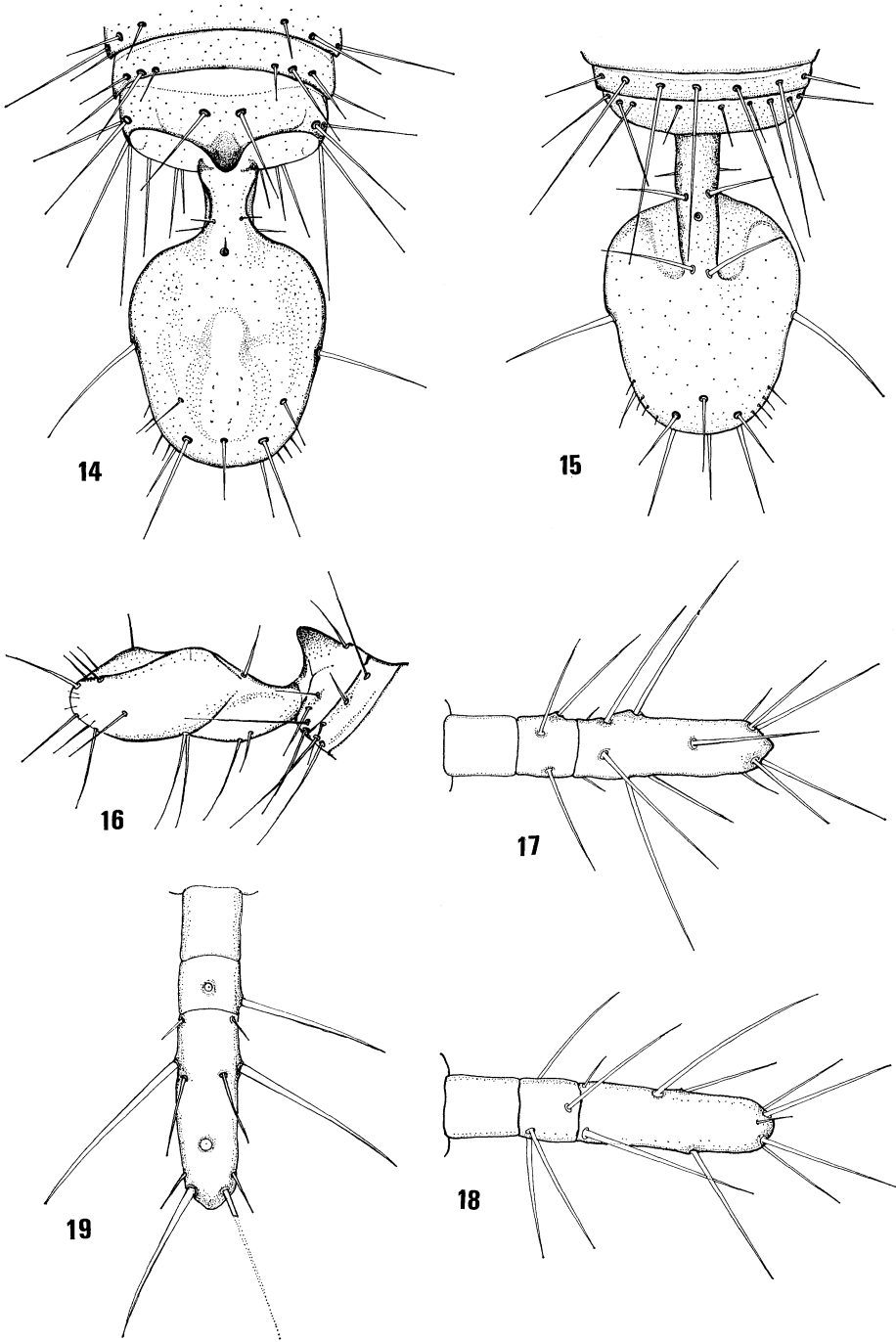
Abdomen: First abdominal tergite small, with a pair of short spine on the posterior margin; anterior side of the second abdominal tergite with a pair of small round depression; second to ninth abdominal segments with pleural membrane. Second to eighth abdominal tergites with a pair of mesal setae on each posterior area as shown in Fig. 1. Ninth abdominal tergite with two pair of setae on the posterior area; segments tenth to twelfth forming a complete ring encircling abdomen and with many short and long setae on the surface of each segment as shown in Figs. 14-16; postero-medial part of the twelfth segment cone shaped and protruding backwards as given in Fig. 16.

Flagellum: Seen from above, similar to a ping-pong racket in shape; its main piece slightly longer than wide; length (excluding stalk) 0.45 mm, width 0.40 mm, antero-lateral and postero-lateral margins round; many long setae present on the surface as shown in Fig. 14; dorsal, lateral and ventral views as given in Figs. 14-16, respectively.

Paratype (adult female): Same data as the holotype. Body length (from apex of carapace to tip of flagellum) 4.28 mm, propeltidial length, 1.55 mm.

Figs. 2-13. *Trithyreus daitoensis* sp. n. male (Holotype).

2. Outer aspect of right chelicera. 3. Inner aspect of right chelicera. 4. The stridulatory area of chelicera (some of the granules enlarged). 5. A part of the serrula (with some of comb-teeth enlarged). 6. Inner aspect of pedipalp, coxa omitted. 7. Outer aspect of trochanter and femur of left chelicera, female (paratype). 8. Feathered seta above serrula of distal end of chelicera. 9. Feathered seta with ventral margin of chelicera. 10. Long modified seta of distal margin of the first segment of chelicera. 11. A short feathered seta with ventral margin of chelicera. 12. Long feathered seta at basal area of movable digit of chelicera. 13. Feathered seta at basal area of immovable digit of chelicera.



Figs. 14-16. *Trithyreus daitoensis* sp. n. male (Holotype).

14-16. Dorsal, ventral and lateral aspects of flagellum.

Figs. 17-19. *Trithyreus daitoensis* sp. n. female (Paratype).

17-19. Ventral, lateral and dorsal aspects of flagellum

Similar to male in form and colour, but smaller. Pedipalpi similar to those in male but shorter; distal process of trochanter not sharp as shown in Fig. 7.

Measurements of right pedipalpus are shown together with those of legs.

Legs: First to fourth legs very similar to those in male but shorter. Measurements of right legs are as follows (mm).

	Pedipalp	1st leg	2nd leg	3rd leg	4th leg
Coxa	0.58	0.68	0.72	0.45	0.43
Trochanter	0.54	0.36	0.22	0.25	0.25
Femur	0.65	1.44	0.97	0.90	1.30
Patella	0.61	1.80	0.58	0.36	0.61
Tibia	0.58	1.33	0.65	0.47	1.01
Basitarsus	—	0.36	0.43	0.61	0.83
Tarsus	0.29	0.58	0.36	0.43	0.40
Total	3.25	6.55	3.93	3.47	4.83

Flagellum: Cylindrical and elongate, three-segmented; basal segment without spine. Views from above and from the side as shown in Figs. 17 and 18, respectively. Second and third segments bear many long and short setae on the surface. Its setation as shown in the Figures 17~19.

Type-series. Holotype: 1 ♂, 31-VII-1977, Hoshino-no-Ana Cave, Minami-daitô-jima, Okinawa Pref., M. SHIMOJANA leg. Paratypes: 2 ♂♂, 1 ♀, same data as Holotype, M. SHIMOJANA leg.; 1 ♂, 1-VIII-1977, Imamura-dô Cave, Minami-daitô-jima, Okinawa Pref., M. SHIMOJANA leg.; 2 ♂♂, 24-VII-1977, Hokusen-dô Cave, Kita-daitô-jima, Okinawa Pref., M. SHIMOJANA leg.; 1 ♂, 26-VII-1977, Miyagi-dô Cave, Kita-daitô-jima, Okinawa Pref., M. SHIMOJANA leg.; 1 ♂, 26-VII-1977, Tamaki-daiichi-dô Cave, Kita-daitô-jima, Okinawa Pref., M. SHIMOJANA leg.

Remarks: This new species seems to have a relation to *Trithyreus sawadai* KISHIDA by the shape and setational pattern of flagellum of both sexes. This new species is characterized by the peculiar male flagellum, and is easily distinguished from *T. sawadai* and all the other species hitherto known by this character alone.

The female of this new species is more closely allied to *T. sawadai* than to any other species, but is distinguished from the latter by the following characteristics:

	<i>T. sawadai</i>	<i>T. daitoensis</i>
Body length	same as long as 1st leg	2/3 as long as 1st leg
Distal margin of pedipalpal trochanter	not protruded	moderately protruded
Number of seta on the last segment of flagellum	bearing 4 long setae at the basal area 4 long setae at the middle area 4 long setae near the blunt apex	bearing 4 long and 2 short setae at the basal area 4 long and 2 mesial setae at the middle area 4 long and 3 short setae near the blunt apex
Number of small tooth between the basal and apical main teeth of immovable digit of chelicera	four teeth	five teeth

摘 要

下謝名松栄 (〒901-21 沖縄県浦添市字内間130 県立浦添高等学校) : 大東諸島産サワダムシ属の一新種。

わが国から2種のサワダムシが今までに記録されている。本報は新種のダイトウサワダムシ *Trithyreus daitoensis* を記載したものである。本種は小笠原諸島のサワダムシ *T. sawadai* に似るが雌雄の flagellum の形と刺(剛刺)の配列のしかたでサワダムシおよびその他の種から区別することができる。

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